FREONS

Also known as: Chlorofluorocarbons, CFCs, Halons

Including: Fluorotrichloromethane, Dichlorodifluoromethane, Trichlorotrifluoroethane, Bromochlorodifluoromethane, Dibromotetrafluoroethane, Chlorodifluoromethane

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WHAT ARE FREONS?

Freons are colorless liquids or gases. Freons were used as coolants or pressurizers in spray can products, including drugs. In the 1970s, scientists discovered that these chemicals were destroying the earth's ozone layer. This was allowing potentially dangerous levels of ultraviolet light to reach the earth. The making and using of freons is now restricted, and freons are being replaced by safer chemicals.

Freons are gases at normal room temperature, liquids when cooled or compressed. Spilled liquid freons do not remain at the spill site for more than a few minutes before they evaporate. If liquid freons leak into soil before evaporation, it can seep into groundwater.

HOW ARE PEOPLE EXPOSED TO FREONS?

Breathing: Breathing gases from spray products is the way most people are exposed to freons. People can also breathe freons that have leaked from refrigerators or air conditioners. It is possible for people to breathe freons from contaminated water.

Touching: When people touch liquid freon, the chemical evaporates before it has a chance to pass through the skin. Some freons evaporate so fast that they can cause frostbite.

Drinking/Eating: Freons are not usually found in drinking water. However, freons may occasionally contaminate groundwater near industrial plants and people may drink this water. Plants do not take up freons when they're grown in contaminated soil.

DO STANDARDS EXIST FOR REGULATING FREONS?

Water: There are no federal drinking water standards for any of the freons. However, there are state groundwater standards for fluorotrichloromethane (Freon 11) at 3,490 parts per billion (ppb) and dichloro-difluoromethane (Freon 12) at 1,000 ppb. We suggest you stop drinking water that contains more than these levels of these freons.

Air: No standards exist for the amount of freons allowed in the air of homes. We use a formula to convert workplace limits to suggested home limits. Based on the formula, we recommend levels of freons be no higher than 24 parts per million (ppm) of Chlorodifluoromethane; 0.24 ppm of dichlorofluoromethane; 24 ppm dichlorodifluoromethane; 24 ppm of trichloro-fluoromethane and 24 ppm of trichloro-trifluoroethane.

The Federal Clean Air Act Amendments of 1990 specifies how much freons can be released into the air.

WILL EXPOSURE TO FREONS RESULT IN HARMFUL HEALTH EFFECTS?

The following health effects may occur immediately or shortly after people are exposed to freon:

- Irritation to mouth, throat, lungs, and nose following inhalation of freons
- Heart palpitations and dizziness after inhalation of gases
- Freezing of skin and possible frostbite following skin contact with liquid freons

Years of exposure to freons are not likely to increase a person's risk of getting cancer. No other long-term effects have been studied.

In general, chemicals affect the same organ systems in all people who are exposed. However, the seriousness of the effects may vary from person to person.

A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking.

It is also important to consider the length of exposure to the chemical; the amount of chemical exposure; and whether the chemical was inhaled, touched, or eaten.

CAN A MEDICAL TEST DETERMINE EXPOSURE TO FREONS?

No medical tests are available to determine freon exposure. Medical tests of lungs, skin, and nervous systems can help doctors determine the extent of damage caused by high level exposure to freons.

Seek medical advice if you have any symptoms that you think may be related to chemical exposure.

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

FOR MORE INFORMATION

- Poison Control Center, 800-815-8855
- Your local public health agency
- Division of Public Health, BEH, 1 West Wilson Street, Rm. 150, Madison, WI 53701-2659, (608) 266-1120 or Internet: http://www.dhfs.state.wi.us/eh

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